

D. FOLSON

# American Potato Journal

Published Monthly by

**The Potato Association of America**

"Entered as second-class matter May 31, 1924, at the post office at Washington, D. C.,  
under the Act of March 3, 1879."

SUBSCRIPTION PRICE \$1.00 PER YEAR

---

VOL. III. NO. 6

JUNE, 1926

---

## Irrigation Number

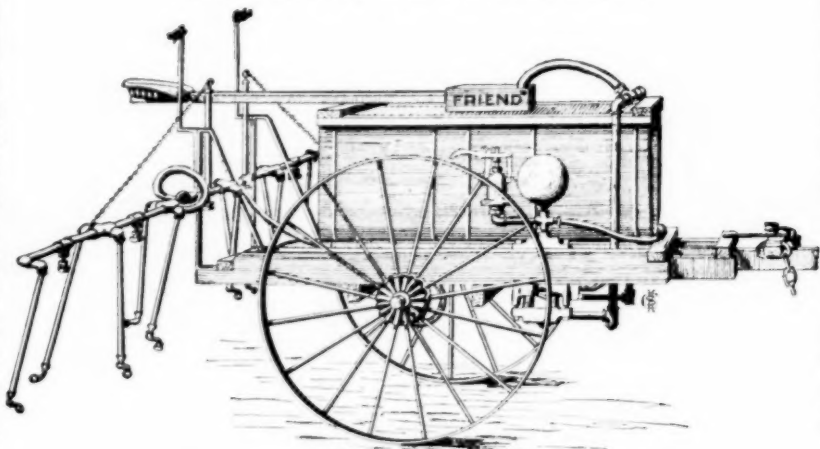
---



"Irrigating Up". Colorado Potato Exp. Sta., Greeley, Colo. .  
Photo by W. C. Edmundson

## GOOD CROPS RETURN PROFITS

*GOOD SPRAYERS DO THE SAME*



### "FRIEND" TRACTION SPRAYER

The "Friend" Traction potato sprayer is a motorless outfit that is a wonder for producing high pressure and maintaining it.

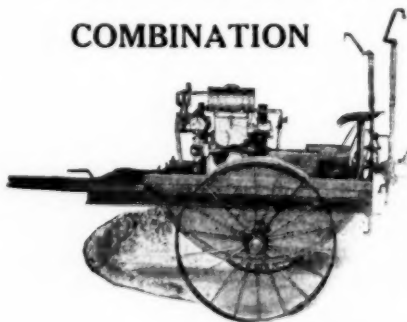
The direct eccentric drive and simple double action pumps mounted along either side of tank, give a quadruplex pump action that puts the "Friend" Traction Potato sprayer in an exclusive class.

Can be furnished with two or one double action pump as desired. Double action pump has 10 gal. per min. capacity. Single pump has 5. 100 gal. tank.

Several types of nozzle booms can be furnished for "Friend" Traction or Combination sprayers. Sizes range from 2 to 6 row and are made with 1, 2 or 3 nozzles to row, depending on type desired.

All "Friend" sprayers and accessories are built for lasting service, with only the best material.

### COMBINATION



Large growers who use power outfits for spraying potatoes and vegetables cannot afford to use anything less than the "Friend" combination.

A very economical sprayer to own as it can be used for field or orchard work with equal success.

The single unit motor-pump is a giant for work and the simplicity of the whole machine makes it pleasing to the eye and economical to operate.

Made in four motor-pump sizes: 5, 8, 10 and 12 gal. per min. pump capacity. All have 150 gal. tank.

Write at once for Bulletin T-26 for full information on traction and combination outfits.

"FRIEND" IS BETTER

**"FRIEND" MANUFACTURING COMPANY  
GASPORT, N. Y.**

# Philipp Brothers, Inc.

Woolworth Building  
233 Broadway  
NEW YORK CITY



¶ We offer standard size trade packages  
---small lots to carloads.    ♡   ♡   ♡   ♡

COPPER SULPHATE  
LEAD ARSENATE  
CALCIUM ARSENATE  
COPPER CARBONATE  
PARADICHLOROBENZOL  
CORROSIVE SUBLIMATE

and all other chemicals necessary for  
the production of farm and orchard crops.  
Your inquiries will be welcome.    ♡   ♡

## IRRIGATING - UR POTATOES

W. C. Edmundson, Greeley, Colorado

In years of normal winter precipitation, followed by ordinary spring rains there is sufficient moisture in the soil to germinate potato seed and produce strong sturdy plants. It sometimes becomes necessary, however, owing to hot spring weather and desiccating winds to irrigate-up the crop, if a good stand is secured. The term "irrigating up" when applied to potatoes may be defined as the application of water to a moisture-deficient soil after planting for the particular purpose of supplying moisture to facilitate germination. It is not the purpose of this article to discuss irrigation of potatoes in normal seasons, but to treat of the methods that may be employed by the grower in his endeavor to cope with adverse conditions as they may occur in a dry season.

The writer has been connected with the Colorado Potato Experiment Station for seven years; three years of the seven there has been a deficiency of moisture in the soil and irrigating-up has been advisable. When the grower is plowing or preparing the seed bed he is generally laboring under the opinion that there will be sufficient moisture in the soil at time of planting to insure germination. For this reason irrigation, if needed will usually be delayed until after planting. If it is found, however, that the ground does not contain sufficient moisture at the time the seed bed is being prepared to insure germination it is well to irrigate before planting. Irrigation before planting insures an even distribution of water and leaves some soils in a finer physical condition if properly handled than ground irrigated after planting. In view of the fact that the quantity of moisture available for the crop cannot be determined early in the season, it is not likely that the land will be irrigated before planting. If the soil is dry at planting time or becomes dry soon after and it is evident that irrigating up will be necessary to insure germination, it should not be delayed for it will be found that young sprouts may be quickly injured in hot, dry soil.

When liberal sized seed has been used and planting has been sufficiently deep, strong sturdy sprouts will develop from the seed and maintain their vigor for sometime even though the soil be deficient in moisture and will respond quickly when irrigated up. If small seed has been used, however, or if the planting has been shallow much of the seed will dry out, rot or produce weak plants, even though the proper quantity of moisture is supplied later.

The method of irrigating up after planting is very important and the grower must exercise the greatest of care if an even stand is to be obtained for the potato or seed piece when planted may sprout without soil moisture but a good root system will not form unless moisture reaches the seed piece. Many of the failures to get a good stand after irrigating-up even though sufficient moisture is withheld in the soil can be attributed to the fact that the moisture never reached a sufficient height in the row to be available to the



young sprouts. The deep furrow which is used for later irrigations to supply water to the deep feeding roots and to keep from saturating the ground around the tubers usually will be found to be too deep for conveying water when irrigating-up. If on the other hand a wide, shallow furrow is used little difficulty will be experienced in supplying water which will be available to the young shoots.



**Irrigating Potatoes. Colorado Potato Exp. Sta., Greeley, Colo.**

Photo by W. C. Edmundson

When cultivation has followed immediately after planting with the shovels on the cultivator set to carry the soil toward the row a wide shallow furrow is made which often will be found better than the deep furrow for irrigating up, especially for short rows. The depth of the furrow used will depend entirely on the length of the rows and the slope of the land for if the land is almost level and the rows are long a larger head of water will be necessary to carry the stream through to the end of the rows. With a shallow furrow a smaller head of water must be employed and the flow continued a greater length of time. It is the custom of many growers to run the water in every other row but it is believed that better results can be obtained when irrigating up by running the water in every row which insures a more even distribution of moisture. The length of time the water should run will depend upon the length of row, the porosity of the soil and the head of water used. The flow should not be stopped, however, until the soil in the row and around the seed piece has become moistened. Care should be taken not to flood land that is poorly drained. Water in the furrows tends to move down in the soil. The movement of water laterally in the ridge or row is by capillarity and will continue to move or sub after the water is turned out of the furrow. Therefore, it is not necessary to thoroughly water the soil around the seed piece. As soon as the soil becomes sufficiently dry to allow tillage a thorough cul-

tivation should be made, preferably with a cultivator with narrow shovels to thoroughly pulverize the soil and retain the moisture. Harrowing the soil will also be beneficial.

## POTATOES IN IRRIGATED ROTATION EXPERIMENTS AT THE SCOTTSBLUFF (Nebraska) EXPERIMENT FARM

James A. Holden, Superintendent

The irrigated crop rotation experiment being conducted by the office of Western Irrigation Agriculture, U. S. Department of Agriculture at the Scottsbluff (Nebraska), the Huntley (Montana), and the Belle Fourche (South Dakota) experiment farms is the most extensive experimental work in crop rotation under irrigation in the United States and perhaps in the world. The rotations at each of the three stations are practically the same. The rotations were begun in the spring of 1912. Previous to this date there had been little or no experimental work done in crop rotation under irrigation. Most experimental crop rotation work under way at that time in the United States was either in the East under humid conditions or throughout the Great Plains under dry land conditions. This discussion will deal only with the data obtained at the Scottsbluff Station.

The soil at the Scottsbluff station is of a light sandy loam fairly representative of the land under the North Platte Reclamation project. It is not a strong soil and will not produce profitable yields of cultivated crops for more than a few years after being brought under irrigation unless it is fertilized. When either barnyard manure, alfalfa or sweet clover is used freely in the cropping system it produces abundantly, equally as well as the black soils of the humid sections. The land is well drained and has a gradual slope so that the plats irrigate well. The land was broken out and cropped to oats the year before the rotations were begun.

In the rotations at Scottsbluff there are 97 one-fourth acre plats divided into 34 different cropping systems. In 15 of these rotations potatoes are grown, 13 of which have been under way since 1912, while the other 2 were begun in the spring of 1920. One is a continuously cropped plat—potatoes have been grown on this plat each summer for the past 14 years. There are six 2-year, two 3-year, two 4-year, three 6-year and one 7-year rotations in which potatoes are grown. Two of the 2-year rotations and one each of the 3-, 6-, and 7-year rotations receive manure periodically at the rate of 12 tons per acre. In the 2-year rotations potatoes follow the manure the first year, in the 3-year rotations they follow it the second year and in the 6- and 7-year rotations, the fourth and fifth year respectively. In these different rotations potatoes follow corn, oats, sugar beets and alfalfa.

Except for the difference in the cropping system and the application of manure each potato plat in the 15 different rotations receive the same treatment. They are planted the same time, the same kind of seed is used, and the cultivation, irrigation and harvesting are all the same for each plat. Any difference in quality and in yield, therefore, must be due to the cropping system.

There is a marked difference in the quality of potatoes grown in the different rotations. Those from the short rotations—3 years or less—are very scabby—so bad that the tubers are unmarketable and are used only for stock feed. When grown in 4-year rotations they are very much freer from scab, and those from the 6- and 7-year rotations have still less. The scab became bad first on the continuous plat, then on the 2-year rotations and later on the 3-year rotations. Since about the fourth year of the experiment the potatoes from the short rotations have been unmarketable, notwithstanding the fact that clean seed which was treated with corrosive sublimate has been used each year. It appears from this that the scab germ can live in the soil in the absence of potatoes at least 2 years and some even into the third year but not 5 years.

In Western Nebraska it is not at all uncommon for potatoes grown on new land, from clean, treated seed to have considerable scab. It may be that the scab germ is carried to new land by heavy winds or by irrigation water, or it may be native. The fact remains that under certain climatic conditions scab shows up in the 6- and 7-year rotations and also on new land. But the amount of the scab on the potatoes from the long rotations and from new land is very small compared with that on the potatoes from the short rotations.

The yield from the different rotations vary as much as the quality of the tubers. The yield from the continuous-cropped plat has averaged 78 bushels per acre during the past 9 years, while those following alfalfa in the long rotations have averaged 290 bushels per acre. The past 9-year average from the 5 plats grown in rotations where neither manure nor alfalfa is used is 125 bushels; that from the 3 short rotations receiving manure is 217 bushels, and from the 6 alfalfa rotations it is 290 bushels per acre. The difference in favor of manure is 92 bushels and 165 in favor of the alfalfa rotations. The manure used in the alfalfa rotations, where potatoes do not come on the manured plat until the 4th and 5th year after it is applied, seems to have little or no effect on the potato yield. The yield of potatoes in these rotations is about the same as the yield in similar rotations without manure.

The wide spread in yield of potatoes from these different cropping systems is due largely to the fact that the yields from the rotations not receiving manure or having alfalfa have decreased, those from the manured rotations remaining about the same, while those following alfalfa have increased. The seasonal variation is rather large, but the differences due to the cropping system are very consistent year after year with a rather

marked tendency for the difference to widen rather than become less. The average yield for the first 4 years was 58 bushels per acre in favor of manure, while the yield in favor of manure the last 4 years was 122 bushels. The first 4-year average yield was 120 bushels in favor of alfalfa and the last 4-year average was 172 bushels in favor of the alfalfa rotations.

In the early part of the experiment the yield of potatoes following sugar beets was much higher than where they followed either corn or oats, but this difference soon disappeared and since then there has been but little difference in the yields of potatoes following either corn, oats or sugar beets. This higher yield of potatoes from sugar beet land in the beginning was perhaps due to the cultural treatment used in growing the sugar beets rather than to the sugar beet crop itself. Poor rundown land is not improved for potatoes by growing sugar beets on it.

The effect of the cropping system on the returns from potatoes is still more apparent when expressed in dollars and cents. There is a marked difference in the profit and loss between high yields of good potatoes and low yields of poor potatoes. As it frequently requires a number of years of cropping before the effect of the rotation is manifest, the first 5 years' results are omitted and only the results of the past 9 years are used—that is, the results from 1917 to 1925 inclusive. The following prices are used in figuring the returns: Interest, taxes and water charges, \$10 per acre; man and team, \$5 per day; No. 1 potatoes, 60 cents per bushel, and cull potatoes, 15 cents per bushel.

On the basis of these prices and the 9-year average yield potatoes show both the greatest loss and the highest profit of any of the crops grown in the rotations. On an acre basis, potatoes grown on the same land year after year show a loss of \$42, while the potatoes grown on alfalfa land in the 6- and 7-year rotations show a net profit of \$69.50. The average loss from the 5 plats grown in the short rotations—3 years or less—amounted to \$39 per acre, while the 6 plats grown on alfalfa land in the longer rotations yielded a net profit of \$64.50. The returns from the potatoes grown in the 4-year rotations are less than those from the 6- and 7-year rotations.

---

## IRRIGATION AND ITS EFFECTS ON THE POTATO

.E. R. Bennett, Field Horticulturist, Univ. of Idaho, Boise, Idaho

It is not uncommon to hear the remark that potatoes grown by irrigation are inferior to those watered by the natural rainfall. This statement may in some cases be true, but it is not sufficiently common to establish it as a law. In fact the opposite should be true.

Potatoes that have been properly and intelligently irrigated should be more normal and of superior quality to those that are

subjected to the hazards and uncertainties of the natural rainfall.

The great difficulty with potato growing by artificial watering is that the grower is prone to feel that, the more water the more potatoes, with the result that he is apt to overdo the thing sometimes to the detriment of both the quality and the yield of the crop.

In justice to truth I should state, however, that, notwithstanding most of us maintain that too much water is used in growing the crop, the fact remains that in most cases that have come under my observation in sixteen years of watching potatoes being grown under irrigation, the man who uses the most water is the one who gets the biggest crop. This is particularly true where the potatoes are grown in districts of high prevailing summer temperatures.

There are also a considerable number of Yankee notions regarding the application of water to potato fields, some as to time of first application and some concern intervals between waterings.

Particular types of soil make it necessary to follow practices in some districts that do not apply in other parts of the country. As a general statement, however, the potato reacts to irrigation about the same as other plants and the principles that apply to the irrigation of other crops are applicable to potato growing. The most prevalent theory is that the potato field should not have water till the tubers are set, or till the field is in full bloom. In some places and with some varieties this rule will apply but if it were strictly adhered to, not infrequently, a total failure would follow. It is possible that a better set and more uniform size of tubers may be obtained if this theory can be carried out but it is doubtful if it is profitable to let the plants suffer for water by delaying its application till that stage of growth.

We believe the application of water to the potato plant previous to the setting of the tubers ordinarily has no detrimental effect other than the possible compacting of the soil, which is always objectionable for potato land. But the system of applying the water after that time has a great deal to do with the ultimate shape, yield and value of the potato crop. A rather vital condition has been noticeable in Idaho potato fields during the past ten years that my observation has covered. Sub-irrigated lands and low, moist spots in non-irrigated fields, have almost without exception produced the smoothest, most uniform sized and best type tubers. On lands where, because of their contours, it is difficult to secure a uniform application of water or where the intervals of time between irrigations have been too great, the product is generally off type, with a high percentage of growth cracks, second growths and otherwise bad type potatoes. We must conclude, then, that the frequency, method and amount of irrigation are very important factors in producing high quality potatoes at least so far as the appearance of the tuber is concerned.

No specific directions can be given for the irrigation of potatoes. A general statement to cover the subject would be about this:

After tuber formation begins keep the moisture content of the soil under the plants as nearly constant as possible. This may mean a light application of water every five days or a heavy irrigation at intervals of two weeks. This difference will be determined by the type of soil, the contour of the land and the climatic conditions. Each grower must make these determinations for himself and act accordingly. Failures, in the way of applying water at the proper time, may be caused by the inability of the grower to secure water but frequently it is simply a matter of waiting till the whole field really needs water before starting to irrigate. If the best results are to be obtained the watering must be begun each time **before the plant begins to feel the need of water.**

There is no question but that too much water, particularly during the latter part of the growing season, reduces the eating quality of potatoes. Peat land or tule land potatoes are recognized as low quality stock. Irrigation that is so excessive as to keep the soil saturated around the developing tubers may bring about the same result, but this is neither necessary nor profitable; hence is the exception rather than the rule among the intelligent growers of **Idaho.**

The prejudice against potatoes grown under irrigation comes then, like with many other things, from the abuse of a good thing rather than from its legitimate use.

---

## IRRIGATION AND DISEASES

H. G. MacMillan, Greeley, Colorado

The yearly world output of publication concerned with all phases of potato study is amazing. The citations are literally numbered by the thousand. Of these a majority deal with some angle of the disease problem. It would seem that there was correct and positive advice for every possible query, that none who can read could go wrong. Yet there are some notable gaps to be filled in the control of diseases, as yearly losses testify. If it was not for the diseases and the tremendous tax imposed by combative measures, as treatments, certifications, sprays, and direct losses what a gentle **art** potato growing would become.

**In** contemplating the life history of plants in their native place, with their native trials and struggles, the surprising thing is their comparative freedom from diseases of all kinds. Diseases which have been introduced from foreign parts, or developed on foreign plants by native parasites are the ones which are devastating in their effects. In its proper home the potato ought to be little annoyed by enemies, or if so, quite able to survive them. It has wandered far from home; it has been developed into a vegetative marvel with a corresponding loss in self protection. The original environment has been supplanted by several, each with some im-



portant defect. Probably the irrigated west offers as artificial an environment as the potato encounters anywhere throughout the country. It is true that the yields are large, that the conditions for growth seem favorable, that risks of the growing season appear minimized; but for all of this the irrigated potato is in a strange land.

The diseases of the potato under irrigation are many and characteristic. The very fact that irrigation is practiced indicates a deficiency of natural precipitation. One irrigates in an arid land, where water is available. An arid land is characterized by a notable lack of dews, long rains, fogs and other persistent humidity. So leaf and vine parasites are rare. The late blight is never seen though *phytophthora* bearing seed has been abundantly planted. The early blight which appear late, if at all, only rarely does damage.

The diseases under irrigation, then, have to be in accord with some other set of ecological features. The seed borne diseases, those which are transmitted in the tuber, virus diseases, and those due to organisms which live in the soil flourish under irrigation. The virus diseases are widespread and common to all potato sections, and they are particularly active under irrigation. Scab and rhizoctonia are always contenders with diseases due to *fusaria* for the privilege of doing the most damage to the crop. There are some other diseases which arise from time to time.

An impression one acquires from too much reading of bulletins is that treatments of the seed effectively control diseases. But the grower knows better, and in some sections seed treatment has been pretty well abandoned. Assume for a moment that seed can be wholly freed of any live scab or rhizoctonia organism, and that the seed goes into the ground clean. Under many irrigated conditions it does not long remain so. The treatment has been worth while, that cannot be denied, but it does not free the crop from the diseases for which treatment was instituted. The argument many times advanced that one should not contaminate clean soils with diseased seed is a good argument, but are there any soils in which potatoes will grow which are free from these organisms. It is true that scab and rhizoctonia are commonly repressed by treatment, but it is also true that often under irrigation untreated seed never develops more than traces of these diseases, and equally true that at other times treated seed develops a great deal of it. The blight due to *fusarium* infection, not seed borne, seems to follow equally erratic methods. There are old beliefs among irrigators that the longer land is in alfalfa the more free it becomes of "blight", yet an instance is at hand of land nineteen years in alfalfa developing a *fusarium* epidemic the first year it was in potatoes. It is evident then that the problem of disease under irrigation is a complicated one.

If these things seem mysterious a consideration of the factors affecting soils will partly explain them. An arid country is one subjected to extremes of condition.



Organisms resident in the soil such as rhizoctonia, scab, or fusarium are subjected to environmental factors of many kinds, primarily temperature, moisture, aeration, and acidity. When one factor changes it means changes in some others. An increase in moisture usually results in a decrease in temperature and aeration, and a probable change in acidity. The ability of the organisms in the soil to attack growing potato plants depends on the maximum effect of soil environment favorable to the organism. It is frequently the case that the lower ends of rows which are apt to be more moist because they endure irrigation water for a longer time commonly yield scabby potatoes. When the field management has been poor and water has remained too long or too often in the rows, all are apt to be scabby. Where water stands it would seem to develop an acid condition. Wet, or bottom lands ought to favor scab, while well drained land ought to tend to freedom from scab. This seems to be the case under actual conditions. Rhizoctonia depends largely on a favorable temperature for its optimum effect. In a sense this is equally true of fusarium. One has rhizoctonia years and fusarium years, but rarely both at once. A seasonal temperature which promotes a rhizoctonia epidemic promises an almost complete absence of fusarium troubles. Rhizoctonia cannot endure a condition which causes fusarium to rot the seed piece, later to wilt the plants, and finally to rot the new tubers. Scab tends to associate more with fusarium than it does with rhizoctonia.

It is a noteworthy fact that the greatest yields, the most vigorous and healthy looking plants, and the best potatoes are produced in what may be designated as rhizoctonia years, or in sections in which the rhizoctonia disease predominates. A condition favorable to rhizoctonia is also one which the potato enjoys, and under which it attains its proper development.

The differences in seasonal temperatures in different years are not large. A cool spring, with a showery, cloudy summer results in a cool soil adapted to rhizoctonia development. A dry cloudless summer favors the development of fusarium, because it creates a warmer soil, yet only a few degrees warmer than a rhizoctonia developing soil. In the case of fusarium there are some aeration factors which are important, and which are not well understood.

No one should assume from these things that seed treatments are worthless. There are years when they are unnecessary because the conditions which developed during the growing season were fatal to the development of the disease. But no one knows when these seasons are going to arrive. Seed treatments should be religiously practiced as a valuable precaution, and because they tend to check other diseases, as blackleg, and it does retard scab and rhizoctonia in a majority of cases. Fusarium is not amenable to seed treatment; it is not to be escaped by any known artificial means. Planting whole seed allays it very considerably, but few growers are willing to plant whole seed. To escape it one should plant vigorous seed, aerate the soil by thorough, persistent cultiva-

tion, and keep the plants growing all of the time. Plants which are actively growing are least susceptible to fusarium troubles.

Potatoes growing under irrigation is an art. By no means are the majority of irrigators adepts at it. There is a skill and judgment required that the ordinary potato grower might develop but which he little realizes. The control of diseases under irrigation depends less on the application of patent methods and treatments, though they are not to be disregarded, than it does on the forethought of the grower in acquiring good seed of the right variety for his soil, and in preparing his land in excellent shape; in his attention to planting properly, irrigating up if the soil is dry, and thereafter a genius in cultivating and irrigating. Some growers always have full stands, vigorous plants, little disease, and what the careless grower calls good luck. The successful irrigator knows that potato diseases will never be eliminated from potatoes, especially under the condition of irrigation. He realizes that a skillful, intelligent grower is after all one of the greatest disease preventative measures that has been devised.

---

## POTATO PRODUCTION IN THE SACRAMENTO-SAN JOAQUIN DELTA

J. T. Rosa, University of California

At the confluence of the Sacramento and San Joaquin rivers, in Central California, is an area of peat and peat-sediment soils of 760,000 acres. From 5 to 10 per cent of this area is planted to potatoes annually, though in recent years the lower figure has been the rule. There are many interesting and unusual features about growing potatoes in this section. In the first place, the surface of the land is generally below the water-level of the creeks, rivers, or sloughs that traverse the area and which cut it up into numerous islands. The islands are diked with sediment dredged from the bottoms of the creeks and sloughs, and this material, after settling, permits little seepage.

When this section was being reclaimed, from 10 to 30 years ago, potatoes were the favorite crop to grow on the raw land. The virgin fertility of the soil and absence of diseases, made it a simple matter to produce huge yields by primitive methods. After this era of skimming the cream was passed, production of profitable crops was not so easy, and only a few years ago many people thought "The Delta" was through, as a potato district. Largely due to the efforts of a few men, the tide has turned, and potato growing in the Delta promises to increase again. A few men, among whom are the Zuckerman Brothers, Fred Rindge, and the California Delta Farms, have spent much money and time, trying to determine the proper kind and amount of fertilizers to use, the proper way to handle the soil moisture, and other factors. That some success is being obtained is indicated by the fact that in 1924

a record yield of 57,752 lbs. per acre (exclusive of No. 2 grade and culls) was produced by Mr. Rindge, and the Zuckerman Bros. are getting 300 sacks (approximately 600 bushels) per acre, as an average yield on hundreds of acres, year after year.

The irrigation methods and practices are especially interesting here. The islands are traversed by permanent head ditches, which are filled at little cost by siphoning water over the levee through 18 or 24 inch pipes, from the canal or river surrounding the island, and wherein there is plenty of water to be had for the taking. The water is distributed from the head ditches over the field through temporary laterals. These laterals are dug with a special ditching machine after the potatoes are planted. They are about 8 inches wide, 2 feet deep, and are generally about sixty feet apart. When these ditches are filled with water, it percolates through the soil rapidly, reaching the middles of the "checks" in a day or two. When this condition is reached, the level of the water is held about constant in the ditches, about 8 inches or one foot below the surface, for a period of sixty days, more or less. Thus the potato plants have an abundant and continuous supply of moisture. Nothing could be more delightful, from the point of view of the potato plants, and they respond with rapid growth, heavy set of tubers which run mostly to No. 1 size, and heavy yields. When the crop is nearly made, the water is drawn off, allowing the top soil to dry out somewhat, and making conditions more favorable for maturation. Electrically driven centrifugal pumps located on the levee, lift the water from the field back into the river, when drainage is desired.

Another unusual feature of potato production in the Delta is that here the potato game is practically a year round proposition. Planting begins in January, sometimes before the digging of the previous year's crop is finished. The January and February plantings run some risk of frost, but if they escape frost, the early crop brings good returns. Last year one grower was shipping in carlot quantities the first week in May, with the price around 4 cents per pound, or better than \$3,000 per car. The main planting season is in March and April. Some plantings continue as late as July, the very late plantings being usually intended for next year's seed. The main harvesting season commences in July, and heavy shipments are made to the various California cities and to Arizona, New Mexico and Texas. The best market conditions generally occur in the period following the peak movement of the crop in Southern California, and preceding that of Idaho, Washington and Colorado. A good market for the Delta potatoes exists throughout the year, however, especially in the California cities.

The varieties grown are mostly of the Burbank type. The true old "White Burbank" or Low top Burbank, does well here, especially for the late crop. However, this variety is gradually going out of use, being replaced chiefly by the Wisconsin Pride or Pride-Burbank variety. This seems to be the same as the White

Rose of Southern California, and the American Giant of the East. It is much earlier than the Burbank and produces beautiful symmetrical tubers of excellent market type. The seed is usually grown locally, from seed imported from Wisconsin and Minnesota. Probably the seed can be grown continuously in this section, without resorting to fresh importations, when we learn more about control of degeneration diseases. The amount of seed used per acre ranges from 10 to 20 sacks of 110 pounds each. This heavy rate of planting no doubt is partly responsible for the large yields. Since the water supply is unlimited and the soil can be fertilized just as much as one wishes, close planting is the rule. The rows are 30 to 36 inches apart, and the seed are 10 to 12 inches apart in the row. Large amounts of commercial fertilizer are used, consisting principally of acid phosphate and potash. In the early days of the potato industry in the Delta, planting and harvesting were both done by hand, by gangs of oriental laborers. At present, however, power-farming is the rule among Delta potato growers. Two or three-row tractor-drawn planters are used, and the crop is now almost universally harvested with machine diggers.

---

## INFLUENCE OF IRRIGATION ON SEED POTATOES

F. M. Harrington, Horticulturist, University of Montana,  
Bozeman, Montana

The question of the relative value of irrigated and non-irrigated seed potatoes is one which is always cropping up. Some sections make a specialty in advertising of the fact that their district is a non-irrigated district. Buyers of seed in many cases buy entirely from the standpoint of whether or not the stock has been irrigated. In Montana we have both irrigated and non irrigated districts. Both types of districts are interested in potatoes. From the seed standpoint immediately came the question as to whether or not good seed could be produced under both conditions. On the basis of four years of tests, we in Montana are saying that it is not the water that makes the difference, but that other factors enter in, factors which are independent of whether or not the crop has been irrigated.

We have been testing the relative value of irrigated and non-irrigated seed in three ways.

**First:** Our station at Bozeman has both irrigated and non-irrigated land, giving about the same conditions in all respects except the irrigation. Using these two sets of conditions, we selected ten lots of seed, dividing each into two parts. One part has been grown continuously on the non-irrigated land and the other on the irrigated land. Each year plots have also been planted under the two sets of conditions bringing the two seed lots of each together—giving from year to year the accumulative effect, if any,

of the environments under which they were grown. No roguing has been done in either case. Representative samples of each furnish the seed for the following year.

**Second:** We have been testing out the seed stock of all growers of certified seed, this stock coming in from both irrigated and non-irrigated sections. These tests have been under both irrigated and non-irrigated conditions at Bozeman, and under irrigated conditions in the Vitter Root Valley.

**Third:** We have been sending samples of our seed stocks to Louisiana for several years. Samples sent have included both irrigated and non-irrigated samples.

**Results of the Tests:**

**First:** The following table shows the results of the work at Bozeman in the first test described.

	Yield—Pounds per Acre		
	No. 1	No. 2	Total
Dryland Seed—3-year Average	12,516	1,982	14,498
Irrigated Seed—3-year Average	12,798	1,681	14,479
Dryland Seed—1925 Results	16,060	1,219	17,279
Irrigated Seed—1925 Results	16,766	1,077	17,843

The above table gives the average results obtained under irrigated and non-irrigated conditions, with the results being the average of the two conditions. The theory has frequently been held that there is a drop in producing power from year to year where the seed has been irrigated. The last year's work does not indicate that such is true. The average of the irrigated stock was slightly better in 1925 than was the case with the non-irrigated stock. We find in the tests that we have obtained a slight advantage one way during one year, but that it may shift slightly the other way the following year. These tests again were conducted at an elevation of 5000 feet, with the frost-free period averaging less than one hundred days. We can say that irrigated seed, then as coming from Montana, has equal value with non-irrigated seed.

**Second:** Our second test as outlined shows the same as the first. We have high yielding stocks and low yielding stocks as coming from both irrigated and non-irrigated fields. But we have observed that many growers have gone out and obtained some of the better yielding strains. Thus, many lots of the same strain of seed, but coming from varying conditions, reach us. Given the same climatic conditions under which produced, these strains have performed about the same, whether coming from an irrigated or a non-irrigated field. Some of the stock, for example, has been under irrigation continuously for many years. And some such stocks are among our highest yielders. If water has reduced their yielding value, what must they have been when first irrigated?

**Third:** In the third phase of our tests, with Louisiana, we can check similar results. A certain strain of seed sent there for several years, has given about equal results, whether irrigated or otherwise.

A stock which gave our best performance in 1923 and 1924 went back for the 1925 tests as grown under the two sets of conditions. The averages were about the same, favoring in 1925, however, the irrigated seed. I might add that our non-irrigated samples were slightly in the lead the year previous.

As to yielding value, we feel that as a result of our tests we can say that irrigation does not cut the yielding value of seed potatoes. We have found, however, that we can divide a sample and send it to various places to be grown for a year, then have the seed sent back to us for checking, and we get varying results. But grown and tested under the same conditions, except for the water, the yield has not varied at Bozeman.

The greatest objectionable influence of irrigating seed potatoes is the fact that there is a tendency toward the production of too many large tubers. Unless a grower knows how to handle the water to best advantage and use other methods to hold down size, this will always be a problem he will meet. Under certification rules, however, he is the fellow to suffer. Tubers over twelve ounces in size are arbitrarily thrown out of grade. We have found that there are control measures for the size factor. In some cases we recommend later planting and checking of growth by cutting the vines. Also, a large seedpiece will result in the production of a high percentage of tubers making seed size, especially as contrasted with the results obtained by using small seedpieces.

We believe, as a result of our strain tests and irrigation tests, that it is the strain that makes the difference. Get a good, high producing strain, low in disease percentage, grow it as certified seed should be grown, and grown to control size, and the results will be the same whether or not the stock has been grown under irrigated or non-irrigated conditions.

---

### IRRIGATING POTATOES

Geo. Stewart, Agronomist, Utah Agricultural College,  
Logan, Utah

Of our common crops, potatoes are one of the most particular as to the proper application of irrigation water. The reason for this is that they are sensitive both to drouth and to flooding the soil. Excessive water creates a condition that prevents proper entrance of air, and therefore, the proper development of the tubers themselves. When grown in soils that are saturated, the tubers become roughened and the lenticels much enlarged. This gives a rather undesirable appearance and they also become impaired in their cooking qualities.

It has been found at the Utah Agricultural Experiment Station highly important to irrigate potatoes soon enough to prevent their being damaged by suffering from lack of water. As soon as they take on a distinctly darker color, it is necessary that water be applied rather soon, lest permanent damage result.



Diseases, too, are known to attack the potato plants much more seriously when the plant is weakened by lack of moisture or by any other unfavorable condition, for that matter, than when the plants are vigorous as the result of proper treatment. Everyone is familiar with the fact that when potatoes discontinue growth for a while and then start up again due to an application of water, what is known as a "second growth" is likely to occur. This second growth results in large roughened tubers due to knobs developing on them. Many smaller potatoes also are likely to result from such practice.

Where the water goes from one farmer to the next in "turns", it is well to irrigate soon enough. Unless the season is a cold one, it is probably safer to irrigate a few days too early rather than a few days too late as the missing of a turn might necessitate. It may be wise on porous soils to irrigate every alternate row one turn and the other alternate rows or all of them the next turn, giving just enough the first time to make sure that there will be no retardation of growth. Both of the applications taken together would be counted as one complete irrigation. If the irrigation stream is rapidly decreasing in volume it may be wisdom to irrigate rather early, especially if the season is warm. The main thing to be accomplished is to avoid a retardation of growth due to a lack of moisture since this may materially decrease the yield.

### Distributing the water

Considerable care should be exercised to get enough water to the plants at the lower end of the rows without over-irrigating those at the upper end. This is best brought about by running the rows in such a direction that there is enough slope for the water to run readily but not enough to cause much washing. A good head of water should be used and the head-ditches should be near enough to permit the water to run quickly to the bottom of the rows. On coarse sands, sandy loams or otherwise porous soils, this is especially important. It is easy to run small streams down long furrows and shut them off as soon as the water reaches the lower end. This, however, distributes the water very unevenly, because the top is thoroughly soaked—often wastefully so—before the lower end is scarcely more than wet in the furrow bottoms. It is good practice to start at one end of the field and work to the other, allowing the water that has passed through the furrows of one "run" to pass into a few furrows on the one just below. This avoids wasting water.

In case the land is uneven, somewhat steep, or difficult for some other reason, it is often advisable to provide sod, or coarse manure if sod is unavailable, for helping to regulate the water in the furrows. A load of sod scattered along the head-ditches before irrigation is begun may save time and trouble. Small inlets for each eight to twelve furrows are of great assistance for controlling water on uneven or steep land. Sometimes it is also advisable to



have a number of sharpened willows or pegs to help hold sod or weeds for turning a part of the stream into one of these inlets. Canvas dams are also convenient.

### Time and Size of Application

The time for the second irrigation will be somewhere near the blooming time. The furrows have been stirred with the cultivator after the first irrigation, but the "regulation" of the furrows in the small inlet ditches should not have been disturbed, unless it is advisable to run water twice as far the second time. In this case every alternate head-ditch is cultivated across and the furrows made continuous. When the vines get long they hang into the furrows and render it difficult to run the water long distances. It may therefore be best to use short "runs" thruout the season. The last irrigation—whether the third or sixth—should not be delayed late enough to prolong the growing season so late in the fall as to make harvest in damp soil necessary. It is commonly accepted in Utah, California, Colorado, and other western states that no water should be added later than about a month before harvest. Wet soil makes digging difficult and leaves the potatoes dirty. Extremely porous soils may be irrigated at almost any time, but most of our land falls in the class which needs attention in this respect.

The Utah Experiment Station tested the irrigation of potatoes for five years. Some plats were irrigated each week and others at different periods in the growth of the crop.

Many towns irrigate their city lots each week. For these the weekly applications may be taken as typical. Water applied at the rate of 1, 2.5, 5, and 7.5 inches weekly to different plats, making totals for the season of 12.8, 32, 64, and 96 inches, gave yields of 337.1, 300.0, 190.9, and 140.5 bushels, respectively. The plat that received no irrigation at all yielded 153.3 bushels. The light weekly application was best and the very heavy poorest, poorer even than that receiving no irrigation. There were also less marketable potatoes for the heavier applications.

The other phase of the test applies to the field culture of potatoes where water can be had as desired. Four stages were arbitrarily chosen: (1) when the vines were four inches high; (2) when tubers began to form, (3) when plants were in full bloom, and (4) when the tubers were ripening. Another plat was irrigated after planting but before the plants showed above ground.

The irrigations were applications of five inches each. Four plats were irrigated only once; others received two irrigations of five inches each in different combinations of stages; others three; and one, four, that is, in all four stages. The plat receiving a 5-inch irrigation in each stage and the one receiving it in the last three stages outyielded the others.

The yield with no irrigation was 153.3 bushels; for one 5-inch application the results were: after planting but before coming up, 139.0 bushels; first stage, 193.9 bushels; second, 201.4 bushels;

third, 229.0 bushels; and fourth, 180.1 bushels. Omission of first stage when three applications were made gave 294.8 bushels, omission of the second 257.2 bushels, of the third 256.4 bushels, and of the fourth 246.4 bushels as against 317.1 bushels for application in all four stages, and 153.3 bushels for none. The high yield of the non-irrigated plat shows that abundant water was stored in the seedbed. These results are what might be expected on well-prepared soil of the same kind—a deep, fertile clay loam. The later irrigations seem more important on this account. Application in the last three stages with the first omitted gave nearly as high yields as did irrigation in all four stages. A dry season or a poorly prepared seedbed would probably have shown greater value for the first application.

From the above it is clear that light weekly irrigations are best for small areas, where the water passes around in weekly turns. One inch of water is just enough to wet the soil for a few inches at the surface. Under field conditions such frequent and such light applications would cost too much as well as cause too many weeds. Three or four heavy irrigations seem to be better under such conditions on loams or on clay loams. Five inches in one application is a thorough irrigation but one not heavy enough to swamp the land. Because sands, gravels, and sandy or gravelly loams will not be able to retain five inches, five to eight lighter irrigations applied oftener will probably give better results.

Some growers maintain that it is bad practice to irrigate potatoes at blooming time. There is no available experimental evidence bearing out this conclusion. Utah Station results seem to indicate that the period of full bloom is one of the best times to irrigate. This was the third stage in the experiment cited. Results for application in one stage and for the omission of one stage show the second and third stages to be the critical ones with the third possibly more critical than the second.

### Summary

Irrigation recommendations may be summarized in the one statement that the ground should be kept moist enough thruout the growing season to permit continuous growth. If the ground dries sufficiently to check growth, there is danger that the tubers will become knobby or gnarled. Sometimes an eye from the bud end sprouts and one or several small tubers are formed at the expense of the original tuber. Such "second growth" is disastrous, for it makes the first tuber soft and soggy as well as causing a high percentage of small, immature tubers.

## WESTERN POTATO DISTRICTS

W. H. Olin, Supervisor of Agr., D. & R. G. W. Railroad Co.,  
Denver, Colorado

The irrigated valleys of the Intermountain West have become important producers of high quality commercial table stock potatoes. The producing districts lie within certain sections of Wyoming, Montana, Idaho, Utah and Colorado.

### — Seven Rules of Potato Success —

(Quoted from "American Irrigation Farming.")

Within these Intermountain Valleys the writer's seven rules of potato success have been found applicable.

1. Careful selection of potato soil is quite desirable. Good under drainage, a reasonably porous soil with sufficient sand or gravel to prevent packing, baking or adobe formation, is much to be desired. A sandy loam soil warms up in the spring, enabling its owner to get the early "new potatoes" on the market, which usually obtain the better prices.
2. Plenty of air, hence porosity in the soil. Potatoes must have air, especially after the setting of the tubers during the period of their maturity.
3. Plenty of available food. Soils rich in potash, with plenty of vegetable mond—humus—are usually well supplied with all the other desirable elements, in available form, for the growing tubers.
4. A well fined, firmed, but porous soil has an evenness of texture which enables it to receive moisture and feed the same to the potato plant, through capillarity, as its root system shall have need. An earth mulch at surface prevents too rapid evaporation of this desired moisture, conserving this essential for the growing plant needs. Thus, other essential requisites are provided for, that encourage a well developed root system, by means of which, the growing tuber plant draws its sustenance, from soil and air.
5. Deep plowing and thorough stirring of the soil, at the proper time, insures soil aeration, so essential in successful potato culture.
6. Plant for seed the type and character of potato you desire to market. Careful, systematic seed selection, is all important, in maintaining quality in potatoes. The writer knows of instances where, by using field run or average bin seed, an average of one sack of culls to twenty (20) sacks of commercial potatoes was obtained. The use of seed grown in seed plots, on these same farms has reduced the production of cull potatoes to one sack of culls to 200 sacks of commercial potatoes.
7. A well ordered rotation of crops is all important for potato success. Potatoes do best when grown after such crops as alfalfa, sweet clover and peas. We should not grow potatoes

on same field oftener than three years, and five years is still better. This tends to freedom from disease troubles. Place potatoes immediately after the **legume** crop, it pays you **best** to grow, to feed **livestock on your farm**. The **feed lot** furnishes the **manure** to keep up **soil fertility** on the **farm**.

### Seek Increased Yield

We, in the irrigated West, are constantly studying how we may increase our yield per acre and better the quality of the harvested potato. We realize and know that the potato is truly the most essential foodcrop of the Nation. Frankly we want the very best "**Special Bakers**", that **seed selection, careful cultural methods** and most desirable soil and climate conditions, can possibly produce.

### Illustrations of Seed Selection

A definite system of using hill selected seed has made the Conrad Johnson strain of Irish Cobbblers, grown in the Duluth Minnesota district, the very best Cobbblers in the Nation. In a similar way R. A. Chisholm of Del Norte and Frank E. Sweet of Carbondale Colorado have developed a most desirable Intermountain Strain of Russet Burbank potato. Mr. Mark Shawyer of Blackfoot, Idaho has done a similar work with Idaho Rurals and Mr. Charles O. Fisher of Dudley, Idaho, with Idaho Gems. Our Western potato growers are truly learning that seed selection is the first essential for potato success.



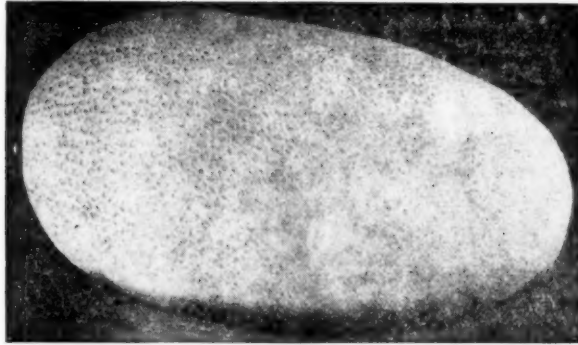
### Hill Selected Seed

The careful Colorado potato grower has learned it pays good returns when planted.

By W. H. Olin, Denver, Colo.

In our irrigated West we are learning the great importance of stirring and cultivating the soil, to keep down weeds and mixing

air in the surface soil. So our Western slogan becomes:- "**Irrigate MORE and irrigate LESS.**" We thus secure normal constant growth and do away with the irregular growth, that produces knobby and irregular misshapen potatoes. It also lessens tendency to grow hollow potatoes.



**An Ideal Type Russet Burbank Seed. Potato Produced by Sweet's Seed Farm, Carbondale, Colo.**

By W. H. Olin, Denver, Colo.

We want to send to the final market that type of potatoes which calls for "**repeat**" orders. We must thus grow and produce a uniform well shaped tuber to satisfy trade demands.

#### **Bags Used in West**

Our western potatoes go to market in bags, no barrels are used. In Idaho, a special sized baker, within these last few years, has gone from that state to market in special containers, carefully graded for **uniformity**. These containers are cartons, made of especial size, for the trade where sent, and command a premium price. The writer understands that the demand for these carton bakers is increasing. At the same time, it adds to consumption of baking potatoes, through the appetizing advertisements being sent broadcast.

#### **How Quality is Obtained**

If the potato grower carefully keeps off the water, when the tubers have made their **normal growth**, so they can ripen up and mature with **no irrigation whatsoever**, irrigated potatoes do come out just as **mealy and starchy**, good **quality flavor**, as those grown in the North and East, under rainbelt conditions. This has been proven in numerous laboratory tests and therefore is unquestionably true.

#### **Yield Per Acre**

As one naturally expects, under irrigation, a greater average yield per acre is obtained. Average field yields from our Intermountain West, under reasonably good farm conditions, range from

125 to 150 sacks per acre (weight per sack 112 to 115 lbs.). Farmers using the better seed and more careful cultural methods, like the Colorado and Idaho farmers named above, this last season were able to harvest 250 to 300 sacks per acre (112 to 115 lbs.), commercial stock potatoes.

### Prospective Shipments

Present indications are that any increase in 1926 acreage within the Intermountain potato districts will be small, not to exceed ten per cent and possibly not that much. Conditions are so abnormal this spring, most potato growers realize they cannot well afford to gamble on prospective potato prices for the coming season. Therefore they will likely adhere to their normal rotation, putting their best land, suitable for potatoes, to the usual farm acreage.

### CARLOT SHIPMENTS FROM THE LATE POTATO PRODUCING DISTRICTS

State	1921	1922	1923	1924	1925 to Mch. 6, '26
Maine	37,999	24,385	34,637	43,129	26,898
New York	18,855	19,295	18,508	20,130	9,436
Michigan	15,174	19,830	19,237	17,450	9,936
Wisconsin	10,970	21,763	16,883	16,033	12,108
Minnesota	29,659	28,908	33,619	31,685	18,365
North Dakota	10,496	8,351	10,333	6,059	4,166
Nebraska	5,321	5,470	13,730	12,413	12,224
Colorado	17,738	15,470	13,730	12,413	12,224
Idaho	14,616	16,213	15,495	11,942	12,925
Whole U. S.	205,693	213,205	241,088	252,591	131,574

From these carlot season shipments from our leading late potato producing states, for past several years, the reader can draw his own conclusions.

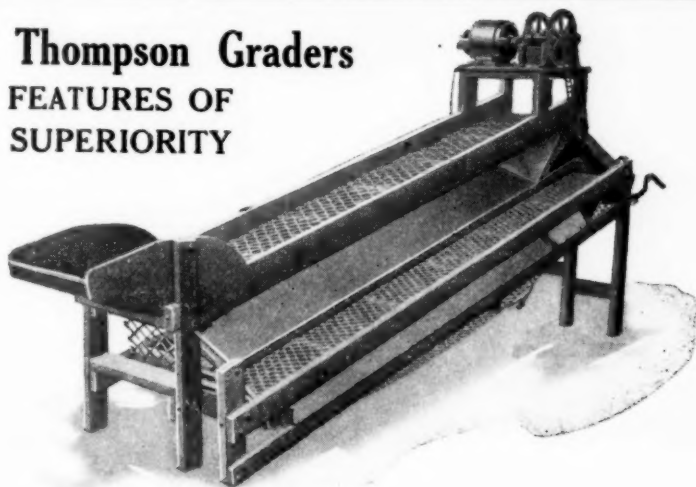
The writer is fully convinced in his own mind that this year no commercial potato grower is justified in any increase in his potato acreage. The usual experience, in the past, has been that an unusual acreage succeeds a year of high prices, markets are flooded and prices fall too near cost of production, to leave the grower any profit on the crop. If anything, the experienced grower in a season with high prices at planting time, feels that is the time to cut his potato acreage to the **minimum**, looking toward a bountiful potato harvest in the fall, with **low** prices on the **market**.

The grower, in a region for early potatoes that shall mature for market before July 10 to 15, is almost certain of a good market price, because of the scarcity of the late crop of 1925 and the lessened acreage of the early maturing crop in the southland.

It is the man who maintains a definite potato crop rotation on his farm, **one year** with **another**, who generally makes a good farm average margin of profit, on his crop. We confidently believe the Intermountain Region has the soil and the climate for production

## Thompson Graders

### FEATURES OF SUPERIORITY



Low Hopper, no Elevator.  
Grading chain double the length of other graders.  
Side chain grades and sacks seconds.  
No picking table, Hand pick off grading chain.  
Simplicity, Low price Superior Construction.  
Literature on request.

**JAMES THOMPSON, 714 7th St., Greeley, Colorado**

of superior quality table stock potatoes and, of late years, it is being demonstrated that our most virile and desirable seed stock is being produced on our high altitude farms above 6500 feet elevation. We are just beginning to realize what a seed asset our higher altitude lands will become to us.

Then too, we are also finding out, as population increases, that **West** as well as **East** calls for our table stock potatoes so both markets have future possibilities for our potato growers.

So we are looking with **hope** and **courage** into the **future** for continued potato success.

---

**TAKE ADVANTAGE OF THE OPPORTUNITY AT TOURS AND MEETINGS TO OBTAIN NEW MEMBERS.**



# AMERICAN POTATO JOURNAL

PUBLISHED BY

## THE POTATO ASSOCIATION OF AMERICA

WALTER M. PEACOCK, EDITOR & BUS. MGR.

108 BALTIMORE AVE., TAKOMA PARK, D. C.

JOSEPH M. HURLEY, ASSOCIATE BUS. MGR.

214 WEITING BLOCK, SYRACUSE, N. Y.

### OFFICERS AND

#### EXECUTIVE COMMITTEE

- § † DANIEL DEAN, PRESIDENT  
NICHOLS, NEW YORK
- § † W. H. TAWSE, VICE-PRESIDENT  
MACDONALD COLL., QUE., CANADA.
- § † WALTER M. PEACOCK, SEC'Y-TREAS.  
TAKOMA PARK, D. C.
- † H. O. WERNER,  
EXP. STA., LINCOLN, NEBR.
- † E. D. MCSWEENEY,  
ROSEMEAD, LOS ANGELES, CALIF.
- § OFFICER. † EXECUTIVE COMMITTEE

### ASSOCIATE EDITORS

- BAILEY E. BROWN,  
U. S. D. A., WASHINGTON, D. C.
- W. C. EDMUNDSON,  
GREELEY, COLO.
- E. V. HARDENBURG,  
AGR. COLL., ITHACA, N. Y.
- WM. H. MARTIN,  
EXP. STA., NEW BRUNSWICK, N. J.
- E. A. STOKDYK,  
AGR. COLL., MANHATTAN, KAN.
- WM. STUART,  
U. S. D. A., WASHINGTON, D. C.
- C. TICE,  
DEPT. AGR., VICTORIA, B. C., CAN.

## CONTENTS

	Pages
Irrigating-up potatoes, W. C. Edmundson .....	192-94
Potatoes in irrigated rotation experiments at the Scottsbluff (Neb.) Experiment Farm, James A. Holden .....	194-96
Irrigation and its effects on the potato, E. R. Bennett .....	196-98
Irrigation and diseases, H. G. MacMillan .....	198-01
Potato production in the Sacramento-San Joaquin Delta, J. T. Rosa .....	201-03
Influence of irrigation on seed potatoes, F. M. Harrington .....	203-05
Irrigating potatoes, Geo. Stewart .....	205-08
Western potato districts, W. H. Olin .....	209-13
Editorials:—Utilization of rainfall, Blue membership application blanks, Letters from E. T. Dunlap, Spirit of a "go-getter", What is J. G. Milward doing for the Wisconsin potato industry? Protecting certified seed against fraud, Illustrations needed, Reprints of papers in the Proceedings. ....	214-19
Crop and Market News:—Active new potato season, Connecticut, Kansas, Louisiana, Maine, Maryland, Michigan, Nebraska, New Brunswick, New York, Virginia, West Virginia, Wisconsin, Canadian Prairies .....	219-27
Potato Meetings and Tours:—Seed potato certification committee, Eastern Shore tour, Long Island potato tour, Wisconsin tour, State potato show and annual convention of the Wisconsin Potato Growers Association, Pacific northwest potato show..	227-30
Notes on Recent Literature:— Potato diseases and their control, M. F. Barrus and Chas. Chupp, Breeding work with field crops at the Experiment Stations, H. M. Steece .....	230-31 231

## THE UTILIZATION OF RAINFALL

Many growers in the western potato producing districts have learned how to utilize rainfall to the highest degree. This number gives many of us a big insight into how it is done. They make use of the water that falls on the mountains as well as that which naturally falls on the improved land. You will enjoy reading about it. Mr. W. C. Edmundson, Superintendent of the Colorado Potato Experiment Station obtained the articles in his very creditable number so if you have any bouquets send them to him and the authors of the papers, or to the editor who will either publish or forward them.

The editor has appreciated the bouquets that have been handed out to him this year and he is sure that Mr. Edmundson and the other authors will enjoy them too. In doing this it is well to remember that no one is paid for writing for the American Potato Journal and that these men could have sent their articles to other agricultural publications and received remuneration.—Editor.

---

## BLUE MEMBERSHIP APPLICATION BLANKS

These will be found in copies of the April number. Many have not been used and every one should be used. The names of the new members and the names of the members sending them in are listed below. The editor with his multitudinous duties only found time to write to Mr. Martin Hall and Mr. B. O. Hagerman and received favorable replies. Mr. Hall is a very successful grower on Eastern Shore, Virginia and a leader in his section. Mr. Hagerman is the agriculturist for the Western Division of the Pennsylvania Railroad.

Mr. E. T. Dunlap, a car lot distributor of produce, Dock and Granite Streets, Philadelphia, has the honor of sending in more names than any other member this month.

Bernard Bros., Trenton, N. J.—E. T. Dunlap, Philadelphia, Pa.

Egan Fickett & Parrish, Inc., Phila., Pa.— " " "

Simon & Dunlap, Philadelphia, Pa.— " " "

C. O. Garrison, Philadelphia, Pa.— " " "

Independent Inspection Service, Phila., Pa.— " " "

E. B. Hartman & Sons, Trenton, N. J.— " " "

Thiel Bros., Baltimore, Md.— " " "

Rev. M. Monaghan, Miscouche, P. E. I.—S. G. Peppin,  
Charlottetown, Prince Edward Island

W. Crawley Ricardo, Vernon, B. C.—John White, Vernon, B. C.

James E. Murphy, Carleton Siding, P. E. I.—S. G. Peppin,  
Charlottetown, P. E. I.

H. W. Purvis, Yorkton, Sask.—J. W. Scannell, Saskatoon, Sask.

P. T. Fortner, Lakeview, Ore.—E. R. Jackman, Corvallis, Ore.

Ernest Pettifor, Gaylord, Mich.—H. C. Moore, E. Lansing, Mich.

W. E. Lutz & Son, Mosca, Colo.—Lou Sweet, Denver, Colorado

R. M. Barr, Minneapolis, Minn.—Paul N. Davis, Hollandale, Minn.  
 Baker Valve Co., Minneapolis, Minn.—E. D. Askegaard, Moorhead,  
 Massachusetts  
 E. T. Adams, Los Angeles, Calif.—Wm. Stuart, Washington, D. C.  
 Wm. H. Day, Jr., Dubuque, Iowa.—Wm. Stuart, Washington, D. C.  
 Martin Hall, Horsey, Va.—Walter M. Peacock, Washington, D. C.  
 B. O. Hagerman, Grand Rapids, Mich.—Walter M. Peacock,  
 Washington, D. C.

The above denotes progress. It is hoped that many times this showing will be reported in the July number. Several have indicated that they are going to get busy this month and secure several new members each.

Judging from the editor's experience it is not hard to get new members and this is especially true when one can come in personal contact with the prospects. If every member, and not a few, would put forth a greater effort our organization would not only be the **greatest** of its kind but would be accomplishing the **utmost good** for the potato industry.

How many know that the value of the 1919 potato crop according to the 1920 census was \$639,440,521.00? The combined value of the grape crop, orchard fruits and small fruits for the same year was \$588,416,156.00. The total value of all other vegetables grown for sale including sweet potatoes and yams for sale and home consumption was \$318,093,439.00. In some other countries the proportion in favor of the potato crop is greater. Should not the potato industry be able to support a strong organization? Is the potato industry receiving its just aids from the federal and state governments?—Editor.

---

Fruit Trade Building Dock & Granite Streets  
 Philadelphia, Pa.

May 24, 1926

Mr. Walter M. Peacock  
 Editor of the American Potato Journal,  
 108 Baltimore Avenue,  
 Takoma Park, D. C.

Dear Sir:

After reading your editorial in the May issue of the Journal I feel that I have been backward in not securing any new members. If you will send me some application blanks I will assure you some new members.

Let me advise you that I consider The American Potato Journal the finest publication of its kind ever published.

Awaiting your correspondence with interest, I am

Sincerely yours,

E. T. Dunlap

June 5, 1926

Mr. Walter M. Peacock  
108 Baltimore Avenue,  
Takoma Park, D. C.

Dear Sir:

Enclosed you will find seven application blanks for associate membership, also check to cover same. No doubt we will be able to push some more through before long.

With kindest personal regards, believe me to be

Yours truly,

E. T. Dunlap

---

Once the editor received a letter from a member living in one of the chief potato producing sections a few hundred miles from Philadelphia, Pa., stating that E. T. Dunlap was progressive, a good cooperator and to the best of his knowledge Mr. Dunlap was working for the welfare of the potato industry. The above letters surely indicate that Mr. Dunlap is a good cooperator, progressive and willing to work for the welfare of our association and the potato industry. We need this kind of produce merchants. The day is coming when there will be a better understanding among the producers, merchants, and consumers. The American Potato Journal is trying to help pave the way.

Mendelssohn, the noted musician, once said,—“Progress is made only by constant effort.” In our association work we need both **constant** and **united** efforts in order to reach our goal. What Mr. Dunlap did in a few days every member can accomplish.

---

### THE SPIRIT OF A “GO-GETTER”

990 Noble Ave.,  
Bridgeport, Conn, May 25, 1926.

American Potato Journal  
Walter M. Peacock, Editor,  
108 Baltimore Ave., Takoma Park,  
Washington, D. C.

Dear Sir:

How much do we owe you for subscription? Send me ten sample copies, and ten subscription blanks, and if I don't wrangle in ten new subscriptions for you some of my friends will be short of funds.

Very truly yours,

H. F. Stratton, Treasurer  
The Corinna Seed Potato Farms, Inc.

## WHAT IS J. G. MILWARD DOING FOR THE WISCONSIN POTATO INDUSTRY

Briefly, he is constantly working for the welfare of this industry from harvest to harvest. If the editor should relate all it would fill a book. Therefore, at present I am going to confine what I may write to only one phase of the subject, but an important one, that of getting several of the growers to read the best and latest information concerning the potato industry.

In March of this year, Prof. Milward started a drive to increase the membership in the Potato Association of America in his state. He did it in a unique way. It is needless to report that he has been successful. To date, 41 new members have already been obtained through his efforts. These have been individually secured through an appealing circular letter with an application blank attached. Prof. Milward has no secrets as to how to get new members and will be glad to give you the essential information. What he is doing in Wisconsin can be accomplished in California, Maine, Minnesota, Pennsylvania, Virginia and other states.—Editor.

---

### PROTECTING CERTIFIED SEED AGAINST FRAUD

This is a subject which has been much discussed and some progress has been made in the way of standardizing certified seed and in forming opinions as to the best way to protect seed against fraud. These opinions should be assembled in written form and after a thorough study the best of each should be formulated into a perfected working plan. Such a plan can only be accomplished through constant endeavors of those interested in the subject. The protection of certified seed against fraud is so important that much thought should be given it.

The editor will be glad to receive the opinions of those interested in the subject at their earliest convenience. It is needless to say that continued action that will work towards a definite goal is necessary. Furthermore, it covers such a large field that **united effort** is essential for its success. Therefore, we need to think seriously about the subject of protecting the **name** that certified seed has made throughout the country and not to be afraid to express our thoughts.

If possible plan to attend the conference which is to be held at Freehold, N. J. on June 21 and 22, where the subject will be discussed.

---

### ILLUSTRATIONS NEEDED

Confucius, who was born 551 years before Christ and who became one of China's greatest leaders once said,—“One picture is worth ten thousand words.” It is true that a good picture may convey an idea at a glance that cannot be as fully and so clearly expressed in words in a short time. Many have not the time in

these days of rapid progress to read and study an article so that they have a clear conception or a mental picture of the idea an author may be trying to unfold to his readers. Pictures would greatly aid those who have vast stores of information and are unable to impart it clearly and concisely to others. An idea represented by a good picture is soon grasped and makes a lasting impression on the mind. How long did it take those who did not know what "Irrigating up," means after looking at the picture on the front page to have a clear understanding of it?

Again the lack of sufficient funds is an handicap in carrying out this idea. However many might be able to borrow cuts that could be used in illustrating ideas in their articles. Credit could be given to the organization or institute furnishing the cuts and they could be promptly returned.—**Editor.**

---

### REPRINTS OF PAPERS IN THE PROCEEDINGS

Dr. E. V. Hardenburg is in charge of publishing the Proceedings of the last annual meeting. Any one who wishes reprints should get in touch with Dr. Hardenburg immediately.

---

## CROP AND MARKET NEWS

### ACTIVE NEW POTATO SEASON

(Contribution from the Fruit and Vegetable Division, Bureau of Agricultural Economics, U. S. Dept. of Agriculture)

The potato shipping season crosses the line about the first week of June. At that time the heavy shipments from the Carolinas bring the supplies of new stock to a larger volume than the combined shipments of old potatoes.

Soon car after car of potatoes will be rolling from the Eastern Shore of Virginia, that fertile strip of land only about 75 miles long and averaging 10 to 15 miles wide between Chesapeake Bay and the Atlantic Ocean, a bit of country of no great size but of great importance in relation to the nation's midsummer potato supply. The Norfolk section to the south and the Maryland Eastern Shore to the north are likewise leading sources of eastern midsummer supply. The potato crop in Virginia at this date shows the best prospects in many years. Shippers expect the first shipments to start about June 10 or 12 and the movement will be light up to about the last week of June, but the peak of activity from the Virginia crop is likely to occur between June 23 and July 15. The rain the middle of May came at a fortunate time and indications promise a good crop of high quality. South Carolina had a full crop and the prices have been fairly well maintained. At a market

level of \$8 to \$10 per barrel, the range was about two-thirds that of the price at which new potatoes opened the season.

In the middlewest midseason potatoes are becoming increasingly important especially in Missouri, Kansas City and Oklahoma. The season is late there also but June shipments are likely to be active from Oklahoma followed soon by the output from the adjoining states. As the season advances still further northward the reduced acreage in Nebraska and New Jersey may tend to reduce the supply and stabilize the prices in late summer.

The weekly movement of old potatoes in early June was almost as large as that of a year ago. Maine was still holding out in considerable volume, likewise Idaho and other western shipping sections. The prices in city markets averaging about \$3 per 100 pounds contrasted somewhat with the level of \$4 or more prevailing in winter and early spring. On the other hand, even the price of \$3 looked very well beside the average of about \$1.25 at the close of last season.

**Connecticut.**—The season continues to be cold in Connecticut, and consequently, the planting is approximately two weeks behind normal. However, the clear weather has allowed farm work to progress rapidly and most potatoes are planted at this date. Early planted potatoes are just coming up. The acreage is normal, as far as can be learned.

There has been a rapid drop in the price of table stock potatoes during the past month and the average is now about \$2.75 per bushel, with only a moderate demand.—**B. A. Brown, May 27.**

**Kansas.**—The Kaw Valley crop is now ahead of last year. Up to a few days ago it was somewhat behind, but last year we had a freeze that froze the vines to the ground. Our danger from frost is now over and the crop promises to be a good one should we receive sufficient moisture to develop it. The stand is between 90 and 95 per cent in most fields. Acreage totals about 16,500 compared with about 17,500 last year. Early indications are that the Valley will ship about 3800 cars.

The Kaw Valley Potato Tour starts on June 1. A report will be sent later.—**E. A. Stokdyk, May 29.**

**Louisiana.**—The potato harvest at this writing is in full progress. More interest is being shown in federal loading point inspection than ever before. Mr. C. R. Newton, federal supervising inspector, has about fifteen men in the field inspecting potatoes for conformity to U. S. Grades. Last year about 200 cars were inspected. This year it is hoped that the number will reach 1,000. Up to the present the market has been quite satisfactory, and growers who planted the best of certified seed on well drained land and fertilized their crop are getting good yields. Some scab is showing up in the crop and the extension specialist in horticulture is planning to put on an extensive campaign in the use of hot formaldehyde treatment next season. It is hoped that we can arrange to treat a large amount of this seed from the car door upon arrival. This past year 2 cars for the



State Penal Farm at Angola were treated, and one of our representatives reports that the results were very satisfactory.

Louisiana is planning to organize an interstate potato tour, covering Nebraska, Minnesota, Montana, North Dakota, and Wisconsin. The trip will be made during August and September, and several growers, railroad representatives, and dealers will probably accompany the extension specialist. It is hoped that this delegation can impress upon some of the states the necessity for reducing the mosaic tolerance, since some of the cars of certified seed Triumphs that came to Louisiana this past season are showing too **much mosaic disease** in the crop. It seems, however, that practically all of the cars that were picked by the Louisiana State University horticultural specialists are giving uniformly excellent results. The ones that are not showing up so well are usually those that are brought in by dealers who do not fully appreciate the significance of requesting the college to pick their certified seed.—G. L. Tiebout, June 2.

Maine.—We have just finished shipping our 1925 crop and the records show that there have been 1677 cars shipped to 18 states. The past season was not as good as the previous one, owing to the high price of table stock which caused many of our seed men to lose their interest. We believe that lack of success in the certified market will cause fewer acres to be entered in 1926. As a matter of fact, up to the present writing, there are less than 4000 acres entered for inspection this year but as our entries do not close until June 15, this may not be much of an index to the situation.

There has been no change in the rules and regulations for this season and it is believed that the standard is now about as severe as our growers can well abide by.

The writer is looking forward to the conference called by the Seed Potato Certification Committee in Freehold, New Jersey, June 21st and 22nd, and shall plan to be there and bring at least one inspector with him.—E. L. Newdick, May 19.

Maryland.—I have just returned from the potato producing section of the Eastern Shore. The early crop of Irish Cobblers in this section is in splendid condition considering the dry weather that has prevailed. The crop is about a week or ten days behind the average growing season.—Fred W. Geise, May 29.

Michigan.—I am spending this week in the upper peninsula of Michigan, making a survey of the potato situation and outlining field demonstrations for the summer. Most of the potato demonstration and test work for the section will be placed on the Upper Peninsula Experiment Station, Chatham, and at the Menominee Agricultural School, Menominee. Field days are held at these places each year and the demonstration plots are studied by hundreds of growers.

The upper peninsula section is well adapted to the growing of potatoes, and the average yield per acre is generally about 25 per cent better than it is in the lower peninsula. The varieties most

extensively grown are the Green Mountain, Russet Rural and Rural for late and the Irish Cobbler and Triumph for early crop.

In some sections the Rural and the Russet Rural varieties are replacing the Green Mountain, since the last variety is somewhat more susceptible to injury from leaf-hopper and drought than the Rural types.

Some very excellent seed is produced in the upper peninsula and it is anticipated that the seed potato industry in this section will develop considerably in the next few years. Special emphasis will be placed on the production of seed of the highest quality. Strains of Green Mountain, Rural, and Irish Cobbler seed selected by the Michigan State College have been placed on ten of the best seed farms in the upper peninsula for increase. The best lots of seed will be distributed among the growers of certified seed.

The season here is very backward. However, potato planting is now in progress and will continue until about the 10th of June. Dry weather conditions have prevailed for 4 weeks or more and the soils in most sections are dry. Forest fires are serious in some of the upper peninsula counties and rain is badly needed.

I expect to attend the Seed Potato Conference at Freehold, N. J.  
—H. C. Moore, May 29, 1926.

**Nebraska.**—"Throughout the early potato growing districts of Nebraska the weather during April and May being unusually dry and exceptionally warm during the latter month, it was on the whole quite unsatisfactory for the potato crop. Fields planted with untreated seed are showing considerable rhizoctonia injury as the result of low temperatures in April. Most plantings are considerably smaller in size than is normal for this season of the year.

The acreage of late potatoes will probably not be very different from former years. The decline in price recently will probably result in the planting of larger acreage than was anticipated several weeks ago. The acreage listed for certification is reported to be about the same as last year. Fewer very large fields are being entered for certification and a goodly number of new growers with small fields are applying. We consider this a very healthy indication."—H. O. Werner, June 3.

**New Brunswick.**—The first planting of potatoes was done during the week of May 20th. According to the information now at hand the acreage of potatoes to be planted will be but a slight increase over the acreage of last year. A number of growers of certified seed failed to read correctly the demand during April and held over something more than a generous supply of seed.

Partly due to a clause in the provisions and standards for certified seed potatoes for 1926—that fields submitted for inspection must have been planted with seed from fields which passed second field inspection—there is a good local demand for certified seed.

The inspection standard for 1926 should be effective in maintaining a superior grade of seed for the export trade. The maxima of

# ***IRON AGE***

## **Modern Potato Machinery**

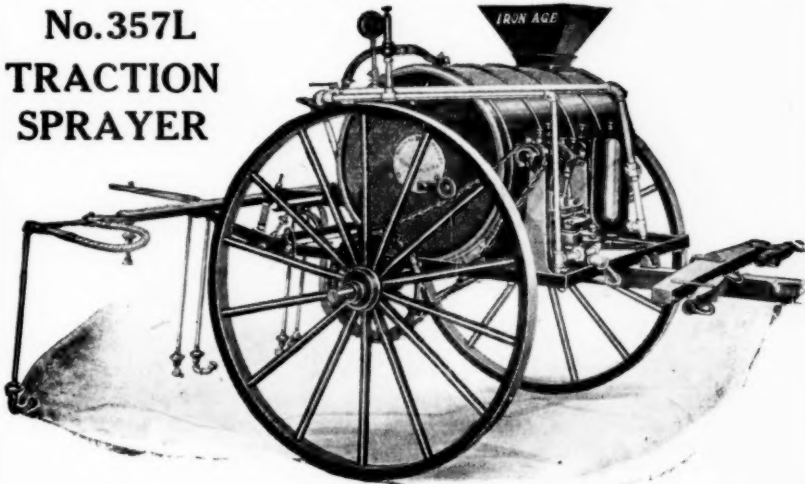
The Latest Approved after many years of Practical Experience  
**IRON AGE HIGH PRESSURE TRACTION SPRAYERS**

**Protect Your Crop.**

**Insure Your Profit.**

The No. 357L Traction Sprayer shown here has all the strong **IRON AGE** features, the new **Triplex Pump**, the new **IRON AGE Pressure Retainer** and **Pump Relief**, 100 gallon cylindrical tank.

### **No. 357L TRACTION SPRAYER**



As shown here it is equipped with the celebrated twelve-nozzle Drop Bar for spraying four rows. This may be replaced with the regular eight-row Bar.

#### **The Assisted Feed Potato Planter**

known as the 100 per cent Planter, is unequalled for absolute accuracy in planting.

#### **The Iron Age Potato Diggers**

Traction or Engine-driven, have wide elevator, are easy-running and give thorough separation.

**Write for catalogues describing these machines, also Garden Tools, Horse Hoes and Cultivators, etc.**

## **Fred H. Bateman Company**

624 South Washington Sq., Philadelphia, Penna.

diseases at the second field inspection is reduced to one-half of the maxima allowed on the first inspection and in percentage is as follows:

Blackleg, 2; degeneration diseases, 1; Mosaic, 1; Wilts, 2; Foreign,  $\frac{1}{2}$ ; Misses (unless due to Blackleg or mechanical causes) 2.  
—O. C. Hicks, Secretary-Treasurer, N. B. Seed Potato Growers' Association. Dept. of Agriculture, Fredericton, N. B., May 19.

**New York.**—As indicated last month, potato planting will be at least a week late because of unfavorable spring weather. In many sections of up-state New York the potato land has been too dry to plow efficiently. Almost no potatoes have been planted at this date—June 1st—whereas a large acreage in this state is usually put in the ground between May 25th and June 1st. The Long Island acreage was planted from a week to two weeks later than average.

Certified seed, particularly of the Rural type, has sold very slowly, apparently on account of high prices. The writer is of the opinion that the final potato acreage planted in New York will approximate that of last year. The larger and more progressive growers will perhaps slightly reduce their acreage, anticipating low prices for a crop grown from high-priced seed. The smaller and less efficient growers will probably increase their acreage somewhat.

Daniel Dean of Nichols, N. Y., President of the Potato Association of America made the following comments in a letter dated May 22nd:

"Blue sprout certified seed has sold very poorly this spring. Growers have not bought because in a high-price year they have preferred to get seconds, culls, or anything very cheap. In former years seed sales have been very heavy after a high-price season. This year only the lower grades have been in demand. There will be a heavy increase in the acreage of dairymen and other farmers who so largely went out of potato growing in the last six years of depression. Men who are regular potato growers are either only just holding their acreage, or in some cases reducing. This type of grower is the regular outlet for blue sprout trade in seed, and with prices high are using their own seed, seconds, or even culls. The very large number of the growers who have potatoes as a side line to dairying, etc., and who are now increasing, compared with the regulars who will only hold their acreage, will make a net increase in 1926."—E. V. Hardenburg, June 1.

**Virginia.**—"What will the harvest be?" This is a subject of much speculation, both as to yield and prices. Cool dry weather has prevailed during the month of May throughout the Tidewater Virginia potato section. Sufficient rain has fallen to provide the immediate need of the plants, but not enough to supply a reserve of sub-soil moisture. Had any prolonged periods of hot weather occurred during the last few weeks, the crop would have suffered severely. In most cases, the vine growth is small but sturdy with a large root development. Most fields present a rather pleasing appear-

This is the year to spray thoroughly and  
make the largest net profit from  
spraying. You can spray  
thoroughly with

## OSPRAYMO SPRAYERS

— x —

*These sprayers are made to maintain high pressure and  
thoroughly cover the vines with spray solution.*

— x —

ONE USER REPORTED A YIELD  
OF 571 BUSHELS PER ACRE  
FOR 1925

# SPRAY

POTATOES with the

**Ospraymo Sprayers**  
Double the Dollars at digging

ONE customer using  
an OSPRAYMO Traction  
Sprayer reports a gain of  
104 bushels to the acre by spray-  
ing four times with Bordeaux  
Mixture. This is our motto:

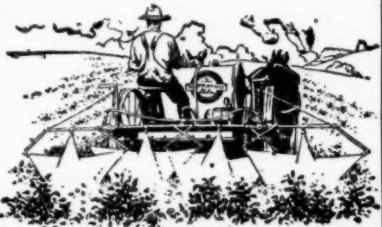
**A Sprayer for Every Need  
High Pressure Guaranteed**

Write for catalog

**FIELD FORCE PUMP CO.**

Dept. F, Elmira, N. Y.

More than 42 years in business



ance because of the regularity of stand and size of plants. The set of tubers is rather light because of the lack of moisture; but if there is sufficient rainfall for optimum growth during the next few weeks, a fair yield may be expected.

Harvesting will begin about June 12th and the shipments will be heavy about the 20th. If the present dry weather continues, it is likely that the shortage which will occur will be reflected in a high July market. It is hoped that by that time most of the old stock which is being held in the Northern potato producing States will have been consumed.—**H. H. Zimmerly, May 31.**

**West Virginia.**—There has been about the average planting of potatoes in this state, or about the same as in 1925.

Barbour County has purchased 5 large four-row sprayers with the orchard combination.

Brooke, Tyler, Pleasants, Wood, Jackson, and Mason Counties have purchased largely of certified seed. The potatoes are just coming through the ground and are showing fine large leaves and every indication of good healthy plants.

The flea beetle is doing considerable damage in some sections. An endeavor is being made to get all the sprayers to work with the hope of driving some of them away. There is a move on foot to secure inspection of all of the commercial crop that will go on the market this year.—**Dee Crane, May 24.**

**Wisconsin.**—We are making tuber index work a feature of our field work this summer both on the Spooner Branch Station and cooperatively with the farmers in the field.

We have some very striking results from the greenhouse indexing this winter and the results of this work will be watched with much interest in the field. Over 100 bushels of Triumph seed was indexed in the greenhouse at University Wisconsin this winter; in addition to 2500 bushels of seed with an index record have been planted by growers.—**J. G. Milward, May 26.**

## POTATO NOTES FOR THE CANADIAN PRAIRIES

(Manitoba, Saskatchewan and Alberta)

Shipping inspection of certified seed was finished early in May. There were not as many potatoes shipped as certified seed this year as had been expected. This was due to the good prices being paid for table stock. Many growers shipped their certified stock with very little grading, as Canada B, rather than grade it to our certification standards.

Last year potatoes were being shipped into the Prairie Provinces from Prince Edward Island and New Brunswick, while this year the Prairie shipped large quantities to Montreal and Toronto markets. Many points shipped as many as ten cars this year that never shipped potatoes before. This impetus that the trade received this year is being reflected in the increased acreage being planted. A conservative estimate of the increase this year



is about ten per cent. This will probably mean an overproduction if an average crop is harvested.

The early part of the spring was dry, but May has been a fairly wet month and the prospects are for a good crop.—J. W. Scannell, May 29.

## POTATO MEETINGS AND TOURS

### SEED POTATO CERTIFICATION COMMITTEE

Monday and Tuesday, June 21 and 22  
Freehold, New Jersey

1. To study the various degeneration diseases of the potato.
2. To study the regulations governing certification in the different states with the idea of formulating uniform requirements.
3. To formulate some method of protecting certified seed from fraud.
4. To discuss other problems confronting the certification authorities.

Tuber unit plantings have been made of mild and rugose mosaic, spindle tuber and leaf roll from Maine; mosaic, spindle tuber and giant hill from Vermont; leaf roll, spindle tuber, mosaic and yellow dwarf from New York and miscellaneous lots from other states. In addition a chance will be afforded to examine a seed source test, scab control by the use of the organic mercury compounds and a comparison of concentrated fertilizer mixtures.

Freehold may be reached either from New Brunswick, New York or Philadelphia. An early train out of either place Monday morning will arrive at Freehold in sufficient time for the conference.

In order to arrange for accommodations at Freehold, the Committee requests that you notify the chairman as soon as possible if you plan to attend.

A complete program will be mailed in the near future upon request.

Wm. H. Martin, Chairman  
Seed Potato Certification Committee  
Potato Association of America

H. T. Gussow  
Karl H. Fernow  
H. O. Werner  
J. E. Currey

### EASTERN SHORE TOUR

The Annual Potato Tour of Accomac County, Virginia will be held June 17, 1926. This tour will be of especial interest to every Irish Cobbler potato grower. Seven test fields will be seen on the tour containing each about twenty plots of Irish Cobblers from different seed sources.

For further information write to W. O. Strong, County Agent, Onley, Va.

### LONG ISLAND POTATO TOUR

The Annual Long Island Potato Tour conducted by Nassau and Suffolk County Farm Bureaus will be held June 23-24-25. The first day will be spent visiting the seven seed source plots in Nassau County, while the second and third days will be spent in Suffolk County. This tour is a big annual event and indications point to its being larger in attendance this year than ever before.

The potato crop prospects on Long Island look very favorable, although not much of an index to the yield can be obtained this early in the season.

Practically only certified seed was planted and we have had no reports of rotted seed pieces or poor come-ups due to other causes.

Colorado potato beetles and flea beetles are present in moderate numbers. The growers have their spray and dust materials on hand and are overhauling their machinery to be in readiness to carry on systematic control measures for insects and diseases.

For information regarding the tour write H. C. Odell, County Agent, Mineola, Long Island.

### WISCONSIN ANNUAL POTATO TOUR

This tour will be held during the week of the 16th of August. The tour is planned especially to cover the Triumph sections beginning on the Spooner Branch Station and then touring through Barrow, Rusk, Price, Oneida, Villas, Forest and Langlade Counties. For further information write Prof. J. G. Milward, University of Wisconsin, Madison, Wisconsin.

### STATE POTATO SHOW and ANNUAL CONVENTION

Of the Wisconsin Potato Growers' Association

To be held at

Antigo—November 16-19, 1926

On Thursday, May 6, the Executive Committee of the Wisconsin Potato Growers' Association met in conference with Langlade County farming and business interests and decided upon the city of Antigo as the location for the 1926 State Potato Show.

Mr. J. C. Lewis, a pioneer Langlade County resident, was selected as general chairman of the local Potato Show Committee.

Chairman Lewis will call a conference of Langlade County interests in the near future to form a complete county committee for the promotion of the Show.

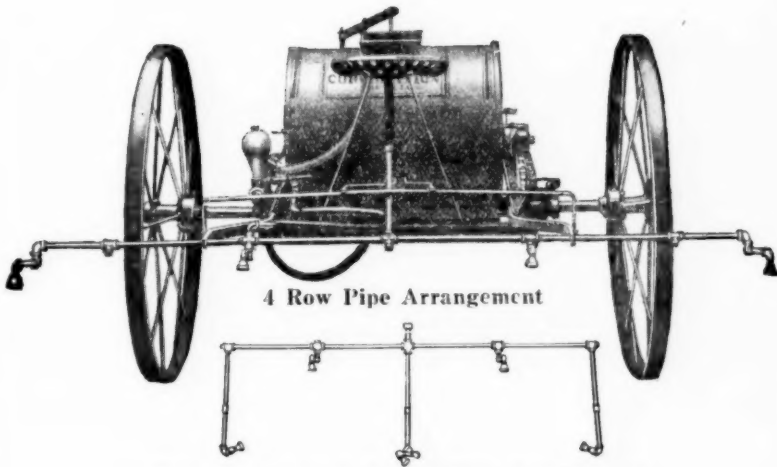
# O K CHAMPION LINE

POTATO PLANTERS—SPRAYERS

POTATO DIGGERS—TILLERS

ORCHARD HARROWS

## O K CHAMPION 4-ROW SPRAYER



4 Row Pipe Arrangement

Two Row—2 or 3 Nozzle Pipe Arrangement

The Four-Row Sprayer has proven its merits for many years. Our all-brass, double acting, bronze ball valve Force Pump is a marvel in performance.

The Sprayer comes regularly equipped with pipe arranged for four rows, one nozzle to the row. The same pipe may be arranged to spray two rows, 2 or 3 nozzles to the row, as shown above.

We invite your inquiry so that we can explain this Sprayer more fully. Address:

## CHAMPION CORPORATION

333 Chicago Ave., Hammond, Ind.



## COPPER SULPHATE

(Blue Vitrol or Bluestone)

An Almost Chemically Pure Product Manufactured by  
**THE AMERICAN BRASS COMPANY**

PURE ANACONDA ELECTROLYTIC COPPER AND ALMOST C. P. SULPHURIC ACID ARE USED. THE COPPER SULPHATE PRODUCED IS THE PUREST OBTAINABLE FOR MAKING

### BORDEAUX MIXTURE

Distributed by

**APOTHECARIES HALL COMPANY,**

**WATERBURY, CONN.**

Langlade County is located in the center of one of the most important potato belts in upper Wisconsin.

The State Potato Growers' Association is especially pleased with the excellent convention and show facilities offered at Antigo and expects the 1926 Show will be the largest ever held in the history of the organization.—J. G. Milward, Sec'y, Wisconsin Potato Growers' Association.

### PACIFIC NORTHWEST POTATO SHOW

The Fifth Annual Pacific Northwest Potato Show will be held November 16, 17, 18, and 19, 1926, at Spokane, Washington. There are four classes in which good substantial money prizes are offered on the following varieties,—Netted Gem, Triumph, Idaho Rural, Burbank, Irish Cobbler, and Early Ohio. The classes are,—(A) certified seed potatoes, (B) commercial potatoes; **Junior Department**, (C) certified seed potatoes, (D) commercial potatoes. Besides the money prizes a special recognition will be given the growers whose entries in classes A or C score 925 or over an Award of Special Merit. This will be a neatly engraved certificate of suitable size for framing, signed by the president and manager of the show and bearing the official seal of the potato show.

Another feature of the show will be a new department where growers and buyers of certified seed potatoes can meet. Bin samples of 100 pounds will be exhibited by growers who have certified seed for sale. These samples will not be judged and will not be in competition for prizes.

## Give your potatoes every chance to produce the biggest possible yield

You, too, will be amazed at what the new improved Pyrox spray will do for your crops. We've made it easier to prepare for use. Five minutes and you're ready to spray. No fuss, no bother. It goes farther and IT STICKS — making frequent sprayings unnecessary. And because it improves foliage it lengthens growing periods and increases crop yields.



# Pyrox

REG. U. S. PAT. OFF.  
TRADE MARK REGISTERED

THE POWERFUL TRIPLE-DUTY SPRAY

KILLS BUGS

CONTROLS DISEASES

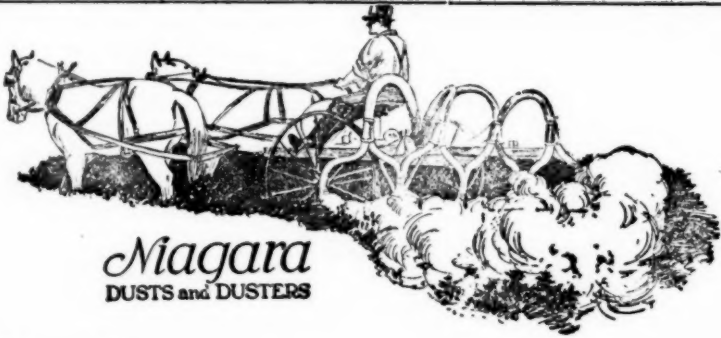
IMPROVES FOLIAGE

Made By

## Bowker Chemical Company

40 West Street, New York

Manufacturers also of Bowker's Arsenate of Lead; Bowker's Calcide (high-grade calcium arsenate); Bowker's Bordeaux; Bowker's Bordeaux Arsenate; Bowker's Lime Sulphur; Bowker's Copper-Lime Dust.



*Niagara*  
DUSTS and DUSTERS

## Dusting

Potatoes Is Today Being Recognized as  
the Approved Progressive Practice

It has been adopted and enthusiastically recommended by leading growers everywhere because it has produced results. They know that because it was possible to make applications at the right time. Dusting has brought crops through to a clean, beautiful harvest—which would have been impossible with the old, slow, more cumbersome methods.

These growers almost to a man have Dusted.

### THE NIAGARA WAY

Dusting the "Niagara Way" means that the growers are using:

1. Niagara Dusters      2. Niagara Dusts      3. Niagara Service

1. NIAGARA DUSTERS "are made right, work right and dust right." They put the Dust where it belongs in such a physical condition that it will cover all exposed parts. They are so light you can get "in and over" even a hillside planting during those wet cloudy times when Blight comes to destroy your crop.

2. NIAGARA DUSTS are mechanically correct and scientifically accurate. They are processed at "Dusting Headquarters," the factory of the Niagara Sprayer Co.

3. NIAGARA SERVICE is a service backed by the Niagara Scientific and Extension Division—a service that teaches you When and How to Dust and What to Use. This service will make you an enthusiastic Duster—and add you to that big list of growers who no longer fear the ravages of Insects and Diseases.

It will pay you, too, to dust the NIAGARA WAY

Talk with your dealer or write us

**NIAGARA SPRAYER CO., Middleport, N.Y.**

**Hand, Traction and Power Dusters**

*Niagara*

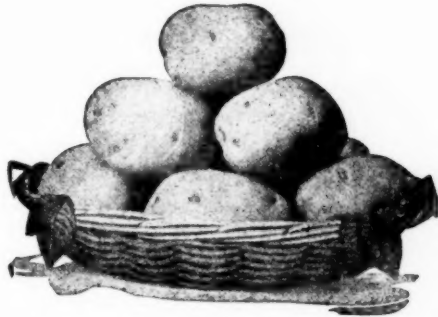
**DUSTS and DUSTERS**



# POTATO DISEASES

Prevented by use of

*Mallinckrodt*  
CORROSIVE SUBLIMATE



Avoid crop losses from Common Scab, Black Scurf, Blackleg and all other diseases by treating your seed potatoes according to directions in our Circular, which will be sent on request.

CALL FOR *Mallinckrodt*

In 5 lb., 1 lb. and  $\frac{1}{4}$  lb. original boxes

ASK YOUR DRUGGIST OR DEALER

---

Mallinckrodt Chemical Works

ST. LOUIS    MONTREAL    PHILADELPHIA    NEW YORK



## SEMESAN BEL

*THE MODERN DISINFECTANT  
FOR SEED POTATO INFECTIONS*

**O**N PAGES 93 to 96 of the March 1926 issue of the "American Potato Journal," there appeared a description of a new and extremely effective treatment with Du Pont Semesan Bel for preventing or controlling the common seed-borne diseases of potatoes. This modern method of disinfecting seed potatoes should appeal to every farmer because it eliminates the time-consuming liquid treatments with mercuric bichloride or formaldehyde and allows instantaneous application in either the dust or liquid mixture forms.

Semesan-treated potatoes captured the Idaho State Crop Record during 1925 with a yield of 862.5 bushels per acre, which was obtained by Mr. Walter Coiner of Hansen, Twin Falls County, Idaho. Moreover, of last year's four heaviest yielding potato crops in Southern Idaho, a district noted for the quality and size of its potatoes, three of them were grown from Semesan-disinfected seeds. In producing yield increases Semesan Bel far surpasses the old type disinfectants.

Semesan Bel prevents seed potatoes rotting in the soil, repels the attacks of soil-borne organisms, promotes quicker sprouting, influences earlier maturity and improves both the quantity and quality of crop yields.

*Send for this  
BOOKLET*



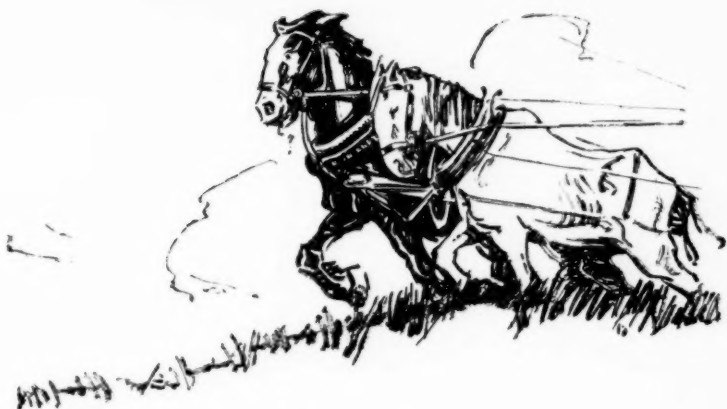
The Idaho Agricultural Experiment Station reported that Semesan Bel: "... when applied to the uncut presprinkled tubers (potatoes) at the rate of three ounces to the bushel gave better control under field conditions than any other treatment tested." The New Jersey Agricultural Experiment Station confirmed the Idaho results.

**E. I. du Pont de Nemours & Co., Inc.,**

*Dpestuffs Department, Sales Division*

WILMINGTON, DELAWARE

*Semesan Bel is for Sale by Reliable Seedsmen*



## The starved horse— and the starved potato

Field demonstrations have shown that complete fertilizers containing 100 to 150 lbs. of actual potash per acre bring good returns.

On this basis at least 1,000 lbs. per acre of a high analysis complete fertilizer containing 10 per cent potash, or 2,000 lbs. per acre if the potash content is 5 per cent, are required for profitable returns. Many successful growers prefer sulfate of potash in their mixtures!

Furrowed ribs—a laggin' gait—tired and weak—by these symptoms we know a horse is starved and sick.

The starved potato plant also shows disease symptoms and malnutrition indications.

If nitrogen is deficient the leaves turn yellow and the vines lack vigor. Insufficient phosphoric acid delays maturity.

Signs of potash hunger are first noticed in the foliage. The leaves develop a bronzed and yellow color; later the leaflets hang limp . . . the vines wilt.

Indications of potash hunger have occurred along the Atlantic Coast from Maine to Florida.

Watch your potato plants this year for malnutrition signs and disease symptoms. A careful study of your plants during the present growing season may have an important bearing on the kind of fertilizer you will use next season.

*FREE. Potato growers will find useful information in the newly revised booklet "Better Potatoes". If you would like to receive a copy just send your name and address to the office below.*

**POTASH IMPORTING CORPORATION OF AMERICA**


10 BRIDGE ST., DEPT. P B, NEW YORK, N. Y.

ATLANTA, GA.

BALTIMORE, MD.

SAN JOSE, CAL

*Sales Agents—H. J. Baker & Bro., New York, N. Y.—Meper, Wilson & Co., San Francisco, Cal.*

Genuine  German  
**POTASH**

# Gold Mine of Ideas Only \$1. for Farmers



555 Illustrations

Here's "the most remarkable book ever published for farmers," says one authority. It is remarkable in the extreme practical nature of its contents, in the wide range of farm subjects covered, in the world of illustrations it contains, and in the extremely low price.

## 861 Discoveries

One discovery sometimes makes a fortune. Here are 861 of them, any one of which may be of many dollars value to you. These discoveries may be classified as follows:

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 138 for the farm shop          | 7 on greenhouse work                 |
| 35 on fencing                  | 22 on farm tools                     |
| 98 on auto, truck, and tractor | 54 on garden work                    |
| 61 on farm buildings           | 34 on poultry                        |
| 36 on field machines           | 17 on the lawn                       |
| 48 on concrete work            | 140 on household helps               |
| 22 on orchard work             | 78 on miscellaneous farm work        |
| 23 on painting                 | 16 on hunting, fishing, and trapping |
| 15 on live stock               |                                      |
| 25 on electrical work          |                                      |

—and every plan has been tested and found to be a money-saver. Most of the articles are illustrated with photographs or drawings. The devices described are easy to make because of these pictures and clear descriptions.

## Suppose you could live your life 417 times

How you could forge ahead of other farmers in a way that would insure you liberal and steady profits! This book enables you to do the next best thing — you may have the experiences of 417 lives — experiences of successful farmers as told by themselves — briefly, clearly, completely. And many of these experiences are illustrated with accurate drawings! Imagine 270 pages chock full of ideas — 583 crystal clear illustrations. Just think of the value to you!

**Just send \$1 and the book will be mailed to you postpaid**

The editor of the American Potato Journal bought a copy of this book before recommending it to the potato growers. In brief, I wish to inform our readers it is full of practical ideas that are worth many dollars to any progressive grower who will be constantly using it as a reference book. Your son will enjoy it too.

## A REAL OPPORTUNITY

Farmers' Handbook of 861 Ideas .....	\$1.00 Postpaid
New subscription for American Potato Journal	
and the book .....	1.65 Postpaid
Old subscription for American Potato Journal	
paid in advance and the book .....	1.65 Postpaid

Send all money directly to

**THE POTATO ASSOCIATION OF AMERICA**

Takoma Park, D. C.

as it receives a commission which will help the association